REMARKS

Claims 1-13 and 15 are pending in the application. Claims 1-7 are withdrawn from further consideration. Claims 8-15 were rejected under 35 U.S.C. §112, second paragraph, as described in paragraph 4 of the Office Action. Claim 13 was rejected under 35 U.S.C. §102(a), as described in paragraph 6 of the Office Action. Claims 8-12 and 14-15 were rejected under 35 U.S.C. §103(a), as described in paragraph 8 of the Office Action. Claims 8, 9 and 13 are the only independent claims.

The specification has been amended to correct minor typographical errors and in general to place the application in correct idiomatic English.

Attached hereto are replacement formal drawings for Figures 4A-C and 25-33. in particular, Figures 4A-C have been labeled independently, and Figures 25-33 have been labeled --Prior Art-- , as suggested in paragraph 2 of the Office Action. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

It is respectfully submitted that claims 8-15 are definite within the meaning of 35 U.S.C. § 112, second paragraph, for the following reasons.

Each of claims 8 and 9 require a discharge tube and a laser gas passage. Furthermore, each of claims 8 and 9 specifically recite an interrelation of the discharge tube and the laser gas passage. Accordingly, in light of MPEP § 2172.01, it is respectfully submitted that each of claims 8 and 9 comply with 35 U.S.C. § 112, second paragraph. Accordingly, it is respectfully requested that the rejection of claims 8, 9, 11 and 12 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Paragraph 4 of the Office Action asserts that it is "not clear if the electrode [is] outside or within the shielded gas discharge tube or indefinite as to where the hole is opened in the discharge tube." Claim 13 as amended clearly indicates that an auxiliary electrode covers the open hole. Further, it is respectfully submitted that a specific placement of the hole need not be recited for one of ordinary skill in the art to recognize the scope of the claimed invention.

Paragraph 4 of the Office Action further asserts that there is "insufficient structure and function relationship to conform a laser oscillator." Claim 13 requires, *inter alia*, a discharge tube, a laser gas passage, electrodes, a high voltage power supply and an auxiliary electrode. Furthermore, it

is respectfully submitted that claim 13 clearly recites the interrelation between the elements recited therein. Accordingly, in light of MPEP § 2172.01, it is respectfully submitted that claim 13 complies with 35 U.S.C. § 112, second paragraph.

In light of the above discussion, it is respectfully submitted that claim 13 complies with 35 U.S.C. § 112, second paragraph. Accordingly, it is respectfully requested that the rejection of claims 13-15 under 35 U.S.C. § 112, second paragraph be withdrawn.

It is respectfully submitted that claim 13 is patentable over prior art Figures 25-33 within the meaning of 35 U.S.C. § 102, for the following reasons.

Claim 13 is drawn to a laser oscillator comprising, *inter alia*, a discharge tube, a laser gas passage, electrodes, a high voltage power supply and an auxiliary electrode. More specifically, claim 13 requires "a distance between the hole and an electrode not connected with said auxiliary electrode [to be] between 0.4L and 0.7L, where L is the distance between said electrodes disposed at both ends of said discharge tube."

It is respectfully submitted that Figures 25-33 fails to teach the above-identified limitation.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the foregoing, it is clear that prior art Figures 25-33 do not anticipate claim 13 within the meaning of 35 U.S.C. §102.

In view of the above remarks, Applicants respectfully submit that claim 13 is not anticipated by prior art Figures 25-33, and urge that the rejection of claim 13 under 35 U.S.C. § 102(b), be withdrawn.

It is respectfully submitted that claims 8-13 and 15 are patentable over the prior art of record within the meaning of 35 U.S.C. § 103 for the following reasons.

Paragraph 8 of the Office Action asserts that discovering "the optimum or workable ranges of the discharge tube and gas passage to fit the laser oscillator involves only routine skill in the art." The cited portion of the Office Action further asserts that discovering "the optimum placement distance or workable ranges of the hole electrode or resistance value involves only routine skill in the art."

In re Boesch, 167 F.2d 272, 205, USPQ 215 (CCPA 1980), discusses rebutting a *prima facie* case of obviousness. In particular, the court cites *In re Antonie*, 559 F.2d 618 at 620,195 USPQ 6 at 8-9 (CCPA 1977), stating that a *prima facie* case of obviousness may be rebutted where, "the result of optimizing a variable, **which was known to be result effective**, [are] unexpectedly good." Therefore, although the Office Action states that "discovering the optimum or workable ranges of the discharge tube and gas passage to fit the gas laser oscillator involves only routine skill in the art," and "discovering the optimum placement distance or workable ranges of the hole and electrode and resistance value involves only routine skill in the art," such assertions incorrectly presumes that the recited dimensions of the discharge tube and the laser gas passage and the recited displacement of the columnar protrusions and the recited diameter of the columnar protrusion was known to be result effective. There is no suggestion in the applied prior art to support this presumption.

In the present case, no evidence presented in the record, other than the Applicants' own teaching, teaches that a relationship of the width of the discharge to the inner diameter of the discharge tube affects laser output. Further, no evidence presented in the record, other than the Applicants' own teaching, teaches that the relationship between the height of the columnar protrusion from the center of the discharge tube and the inner diameter of the columnar protrusion affects the laser output. Finally, there is no evidence presented in the record, other than the Applicants' own teaching, that teaches that the distance between the electrodes disposed between the two ends of the discharge tube affects the laser output.

In the words of *Antonie*, and in the absence of evidence presented in the record to the contrary, it is respectfully submitted that neither one of the relationship between width of the discharge tube to the inner diameter of the discharge tube, the relationship of the height of the columnar protrusion from the center of the discharge tube to the inner diameter of the columnar protrusion or the distance between the electrodes disposed at both ends of the discharge tube "was not known to be result effective" with respect to the output of the laser.

Accordingly, in light of *Antonie*, it is respectfully submitted that the Applicants have rebutted a *prima facie* case of obviousness with respect to claims 8-13 and 15, because the Examiner's

assertions of optimization is not based on teachings in the prior art indicating that the variable for which it is to be optimized is known to be result effective.

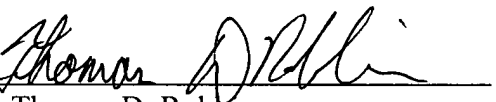
In light of the above discussion, it is respectfully submitted that it would not have been obvious to modify that which is illustrated in Figs. 25-33 to arrive at the present invention. Accordingly, it is respectfully requested that the rejection of claims 8-13 and 15 under 35 U.S.C. § 103, be withdrawn.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

Respectfully submitted,

Hiroyuki HAYASHIKAWA et al.

By: 

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